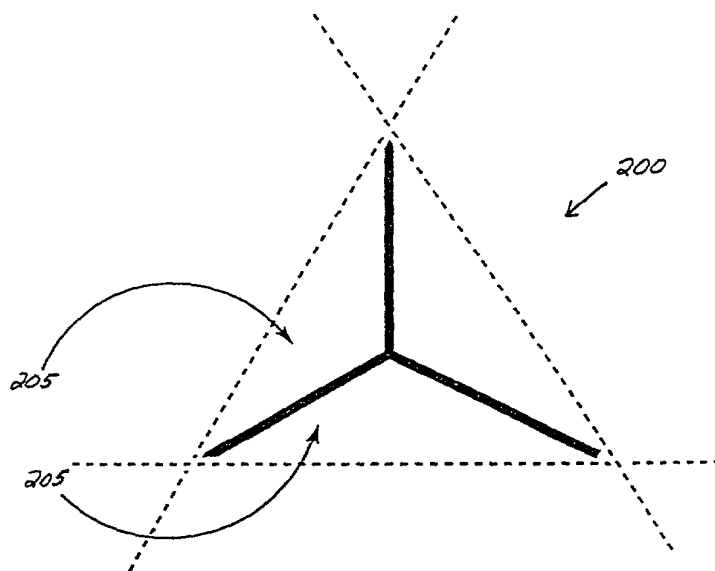


FIG. 1A  
PRIOR ART



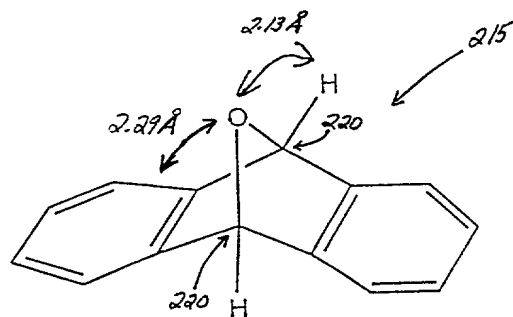
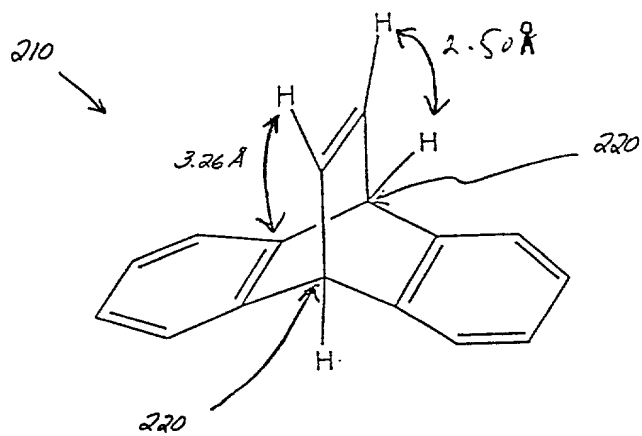
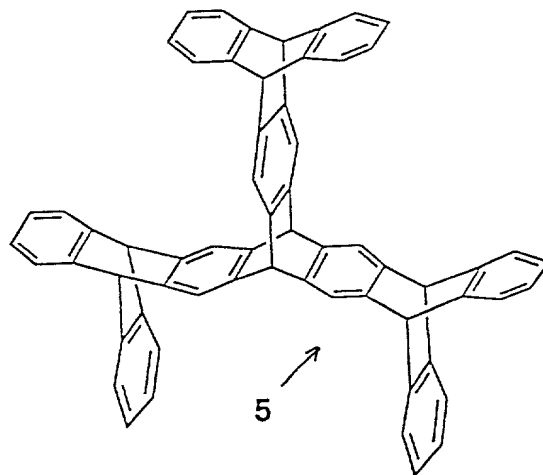
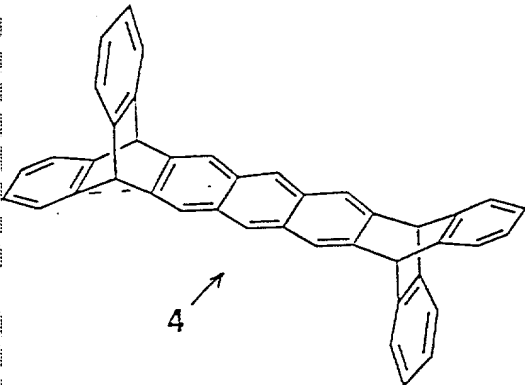
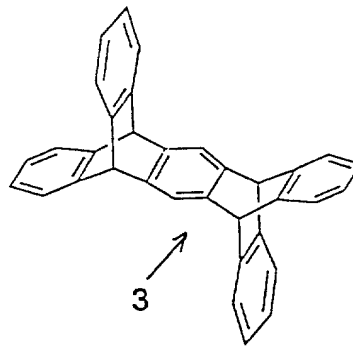
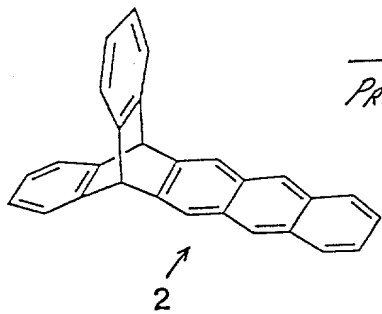


FIG. 1B  
PRIOR ART

FIG. 1C  
PRIOR ART



0937550.093701  
101250.093660

09935050 09935050

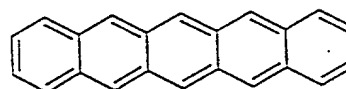
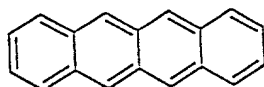
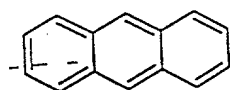
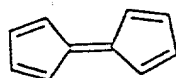
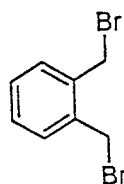
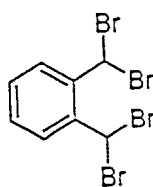
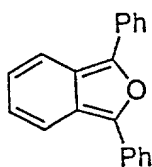
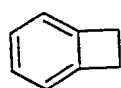
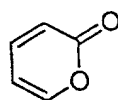
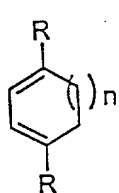
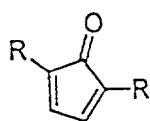
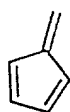
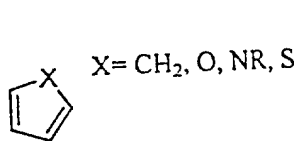
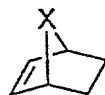
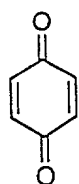
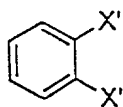


Fig. 1e



$X = \text{CH}_2, \text{C}=\text{O}, \text{O}, \text{NR}, \text{S}$



$X' = \text{Cl}, \text{Br}, \text{I}$

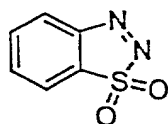
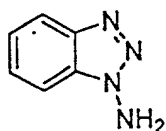
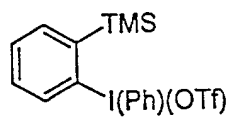
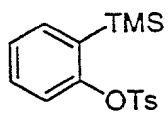
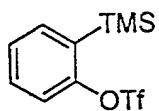
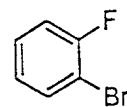
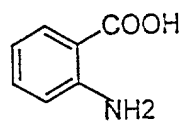
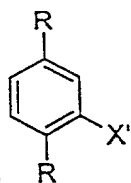


FIG. 1f

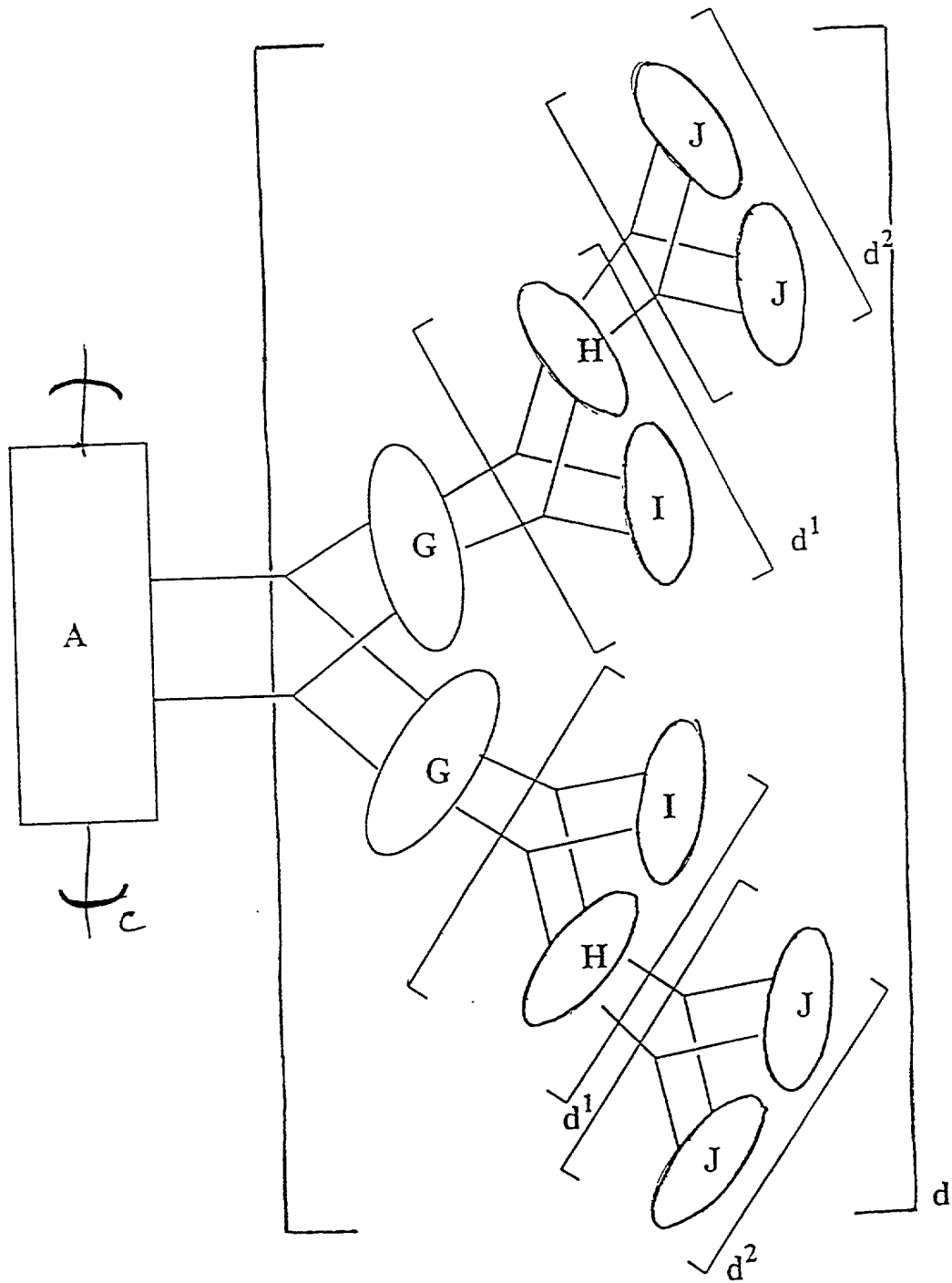


FIG. 19

FIG. 1H

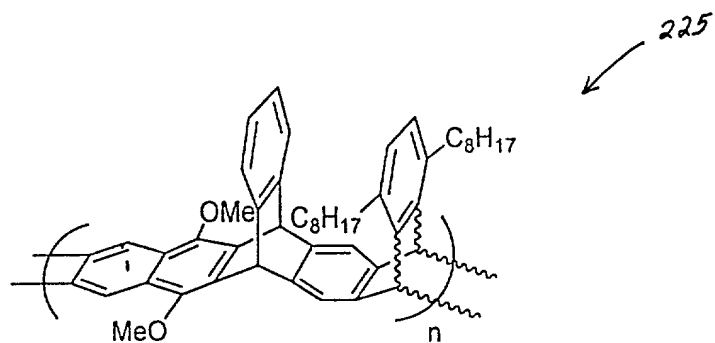


Fig. 13

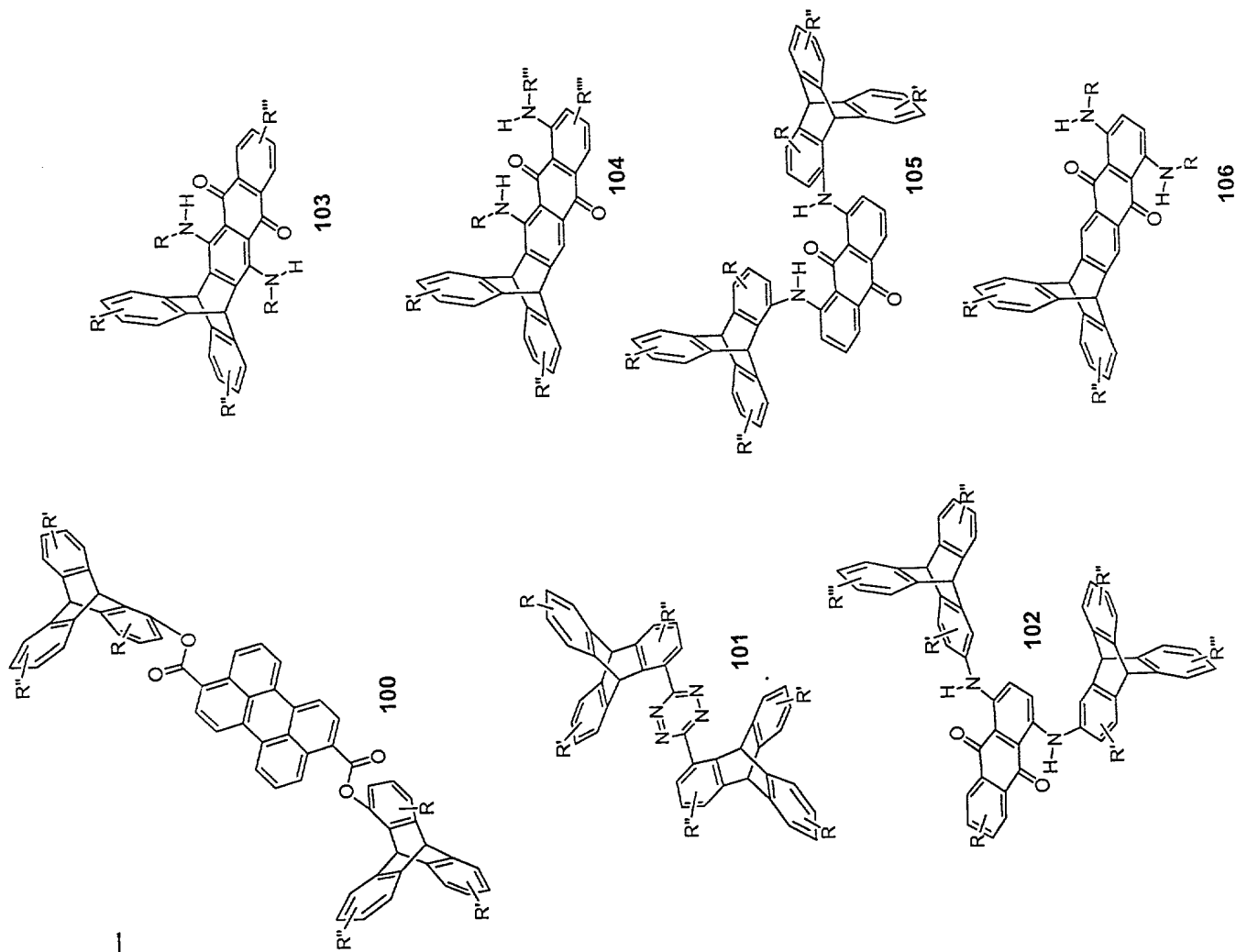




FIG. 1K

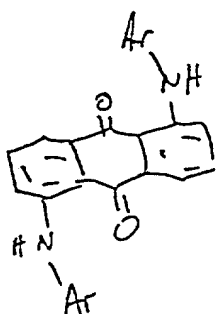
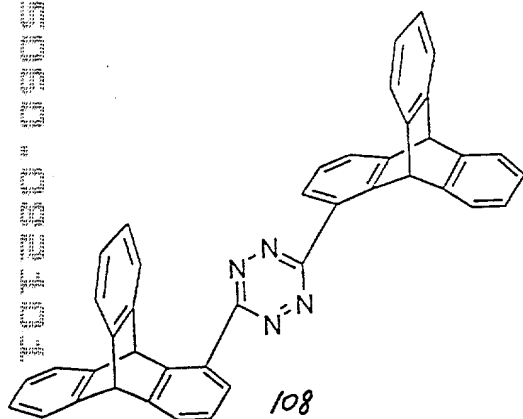
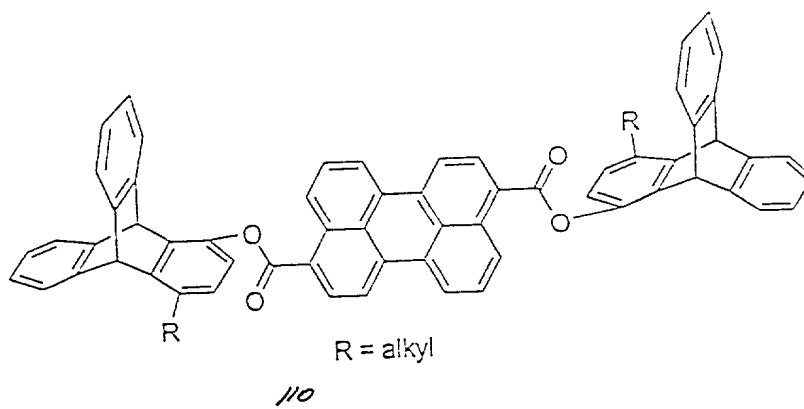
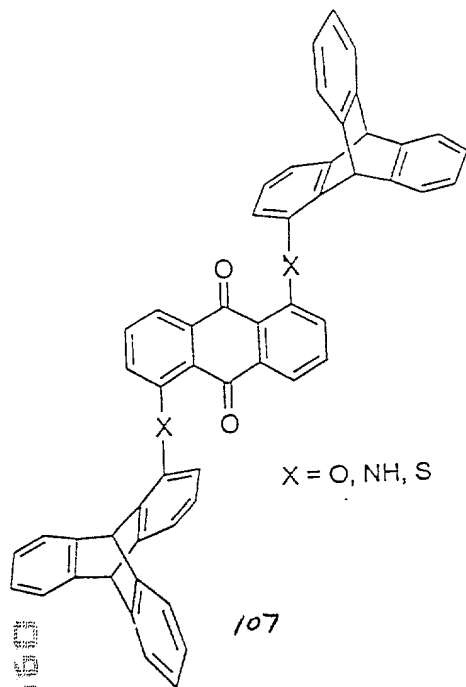
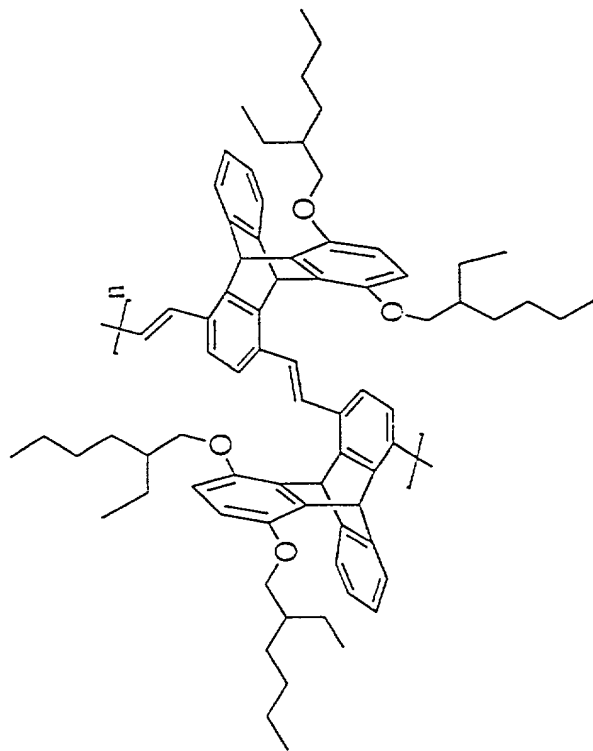
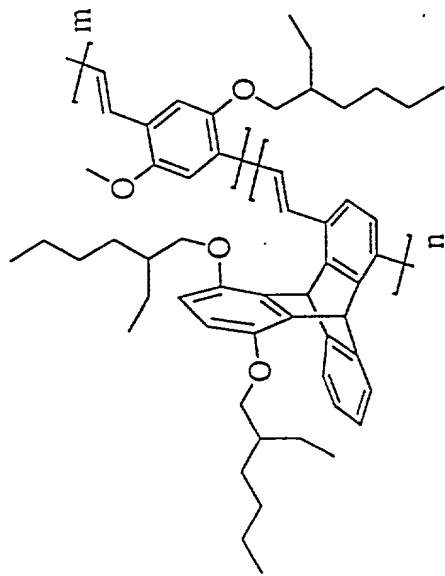


Fig. 11

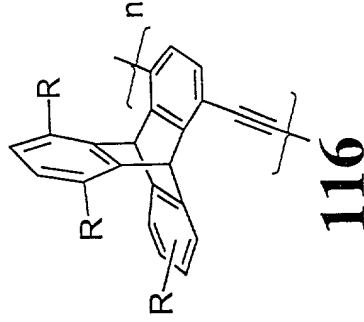
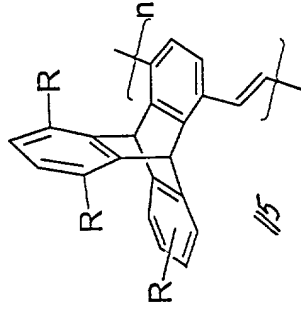
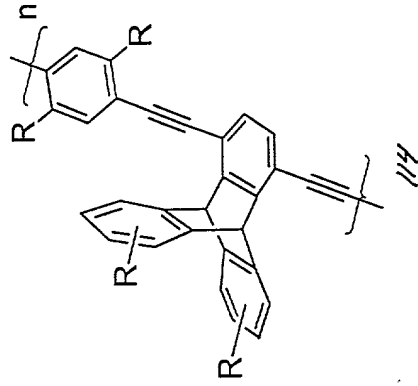
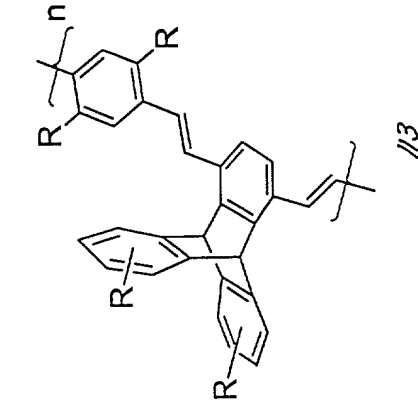


III



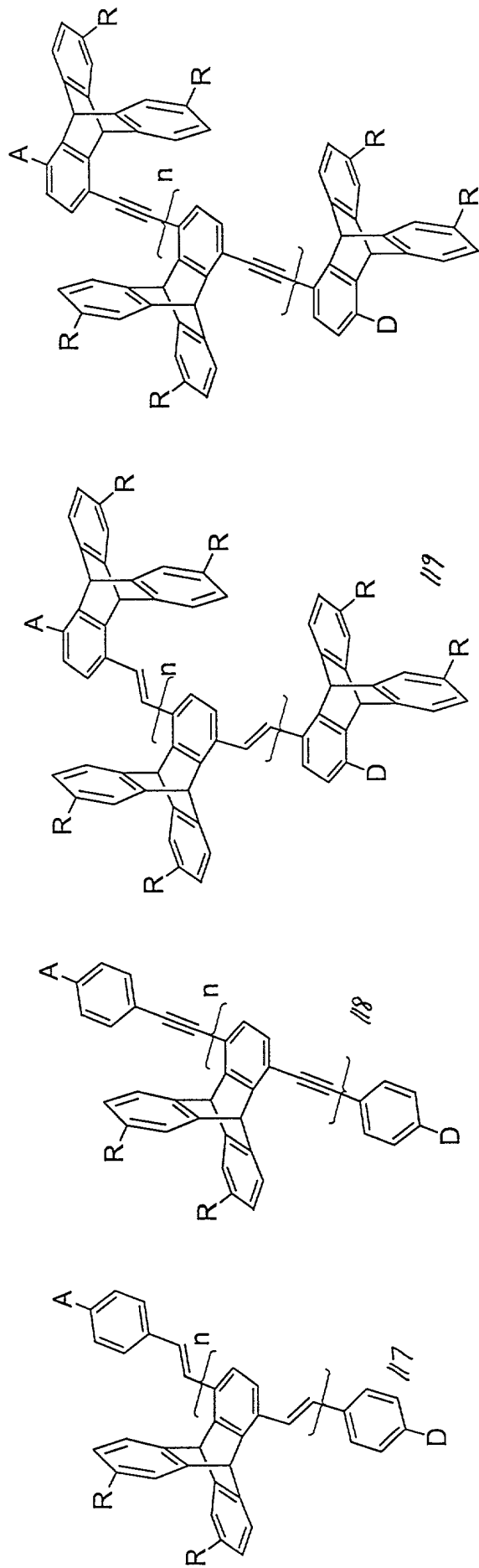
112

Fig. 1M



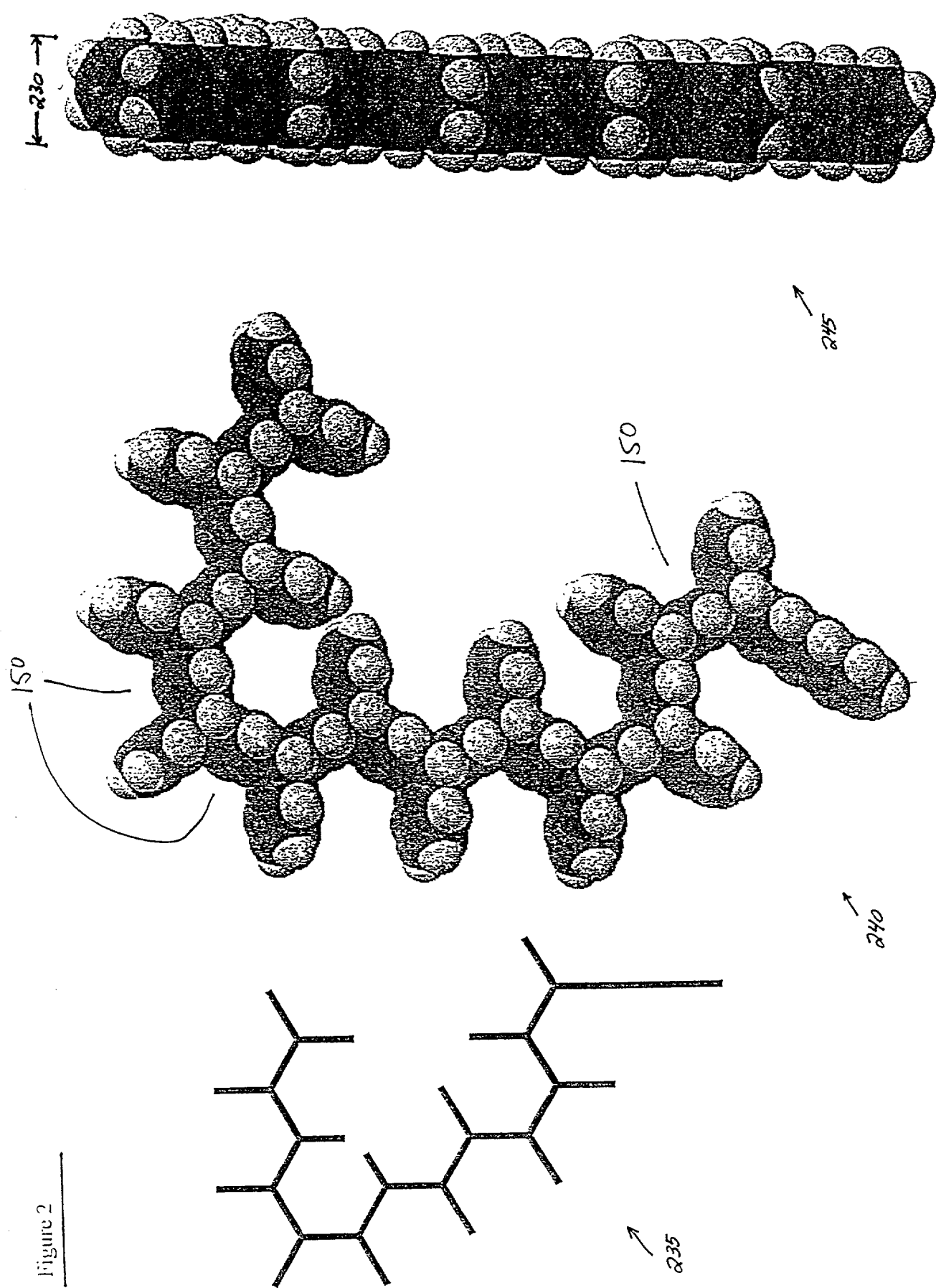
$R = C_nH_{2n+1}, C_nF_{2n+1}, OC_nH_{2n+1}$

Fig. 1N



$A = \text{CN}, \text{C}_n\text{F}_{2n+1};$   
 $D = \text{N}(\text{C}_n\text{H}_{2n+1})_2, \text{OC}_n\text{H}_{2n+1};$   
 $R = \text{C}_n\text{H}_{2n+1}, \text{C}_n\text{F}_{2n+1}, \text{OC}_n\text{H}_{2n+1}$

Figure 2



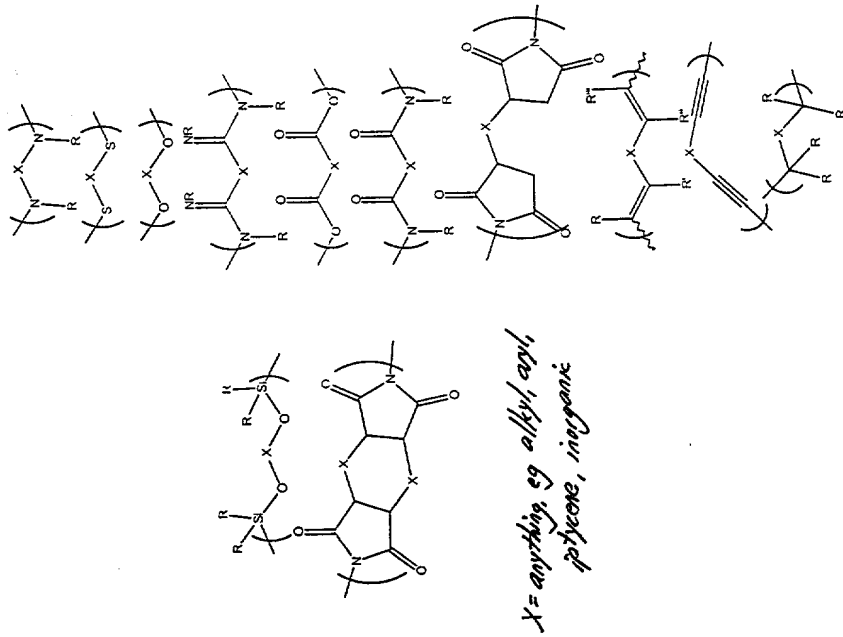
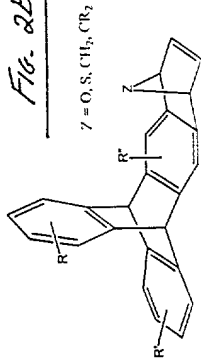


Fig. 2A

Fig. 2B



$X$  or  $Y$  contains an ipitycene

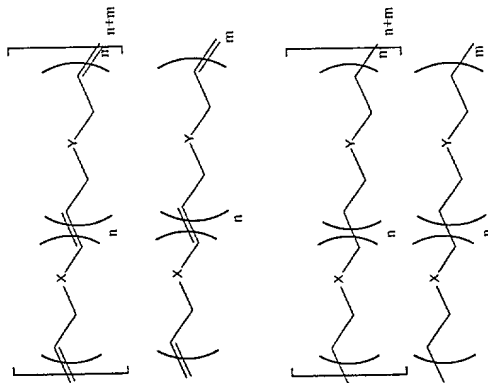
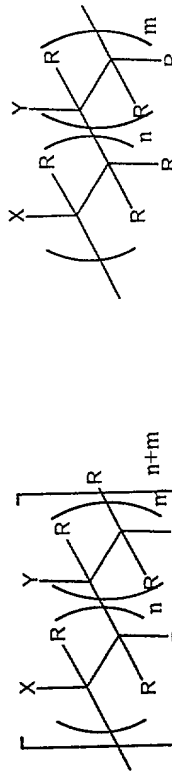


Fig. 2C

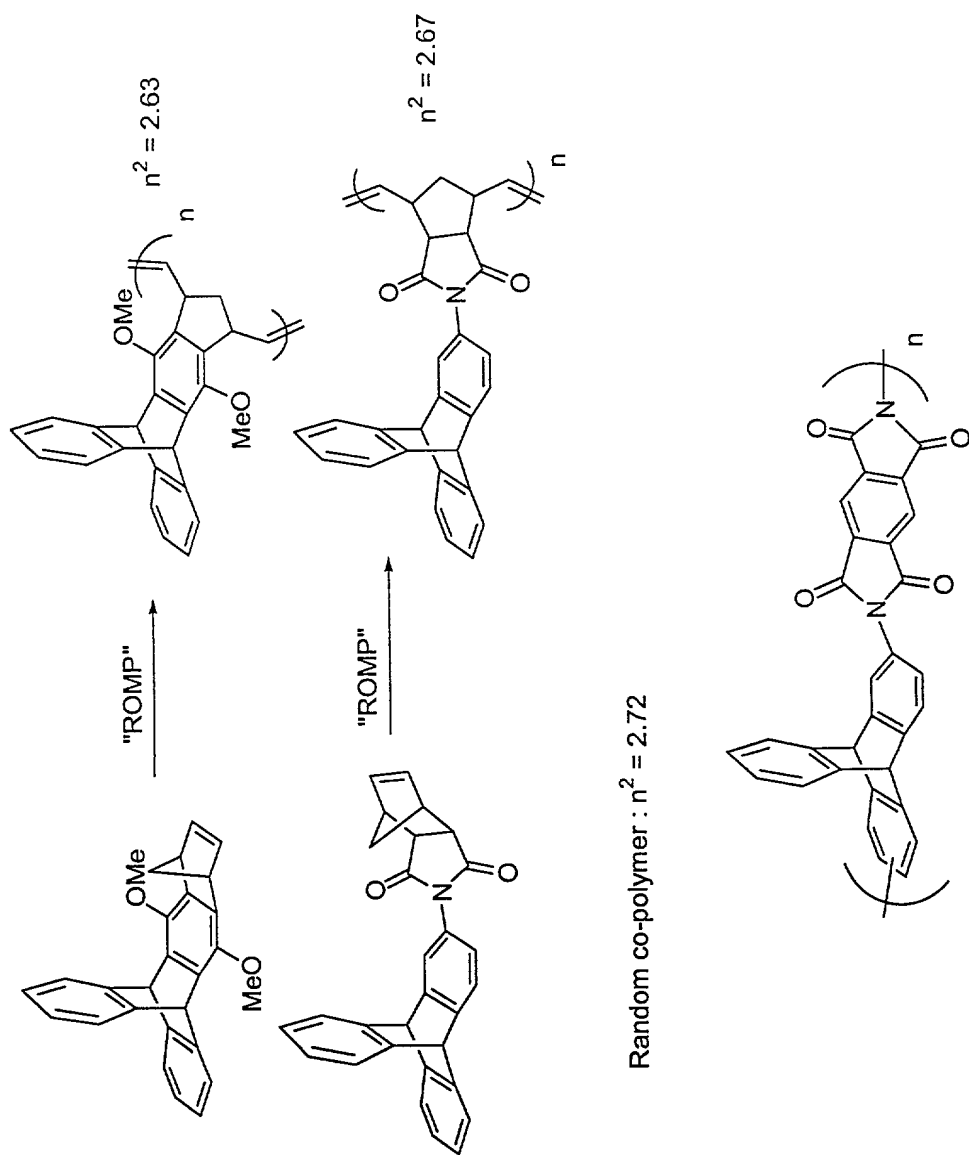


Where  $X = Y$  or  $X \neq Y$

Fig. 2D

If  $X = Y$ , then polymer may be atactic, isotactic or syndiotactic  
 If  $X \neq Y$ , then each block may be atactic, isotactic or syndiotactic

$R = \text{functionalized ipitycene}$



00935050.082401

FIG. 3

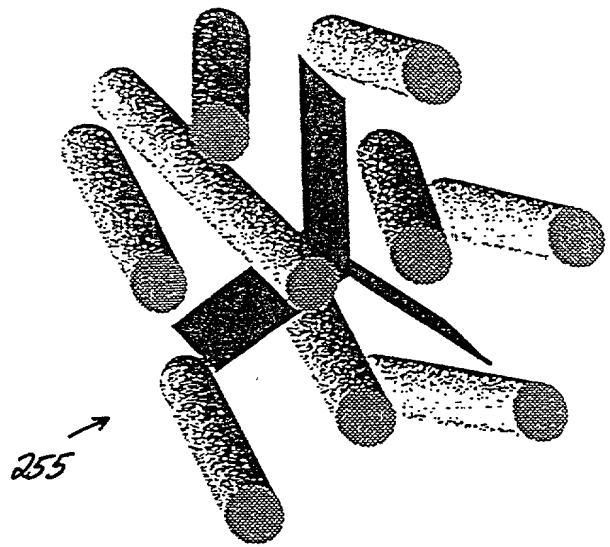
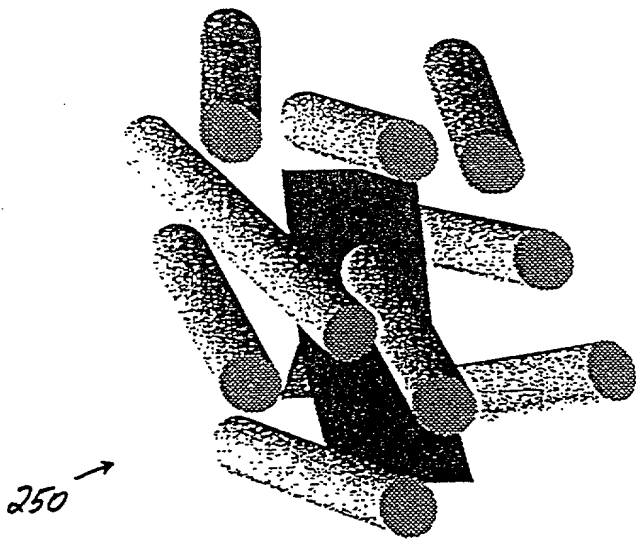
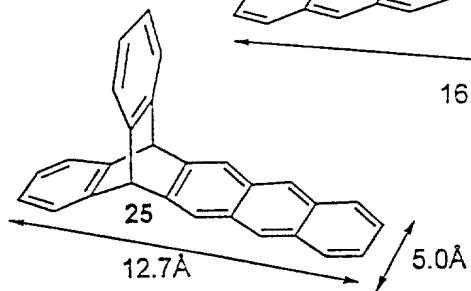
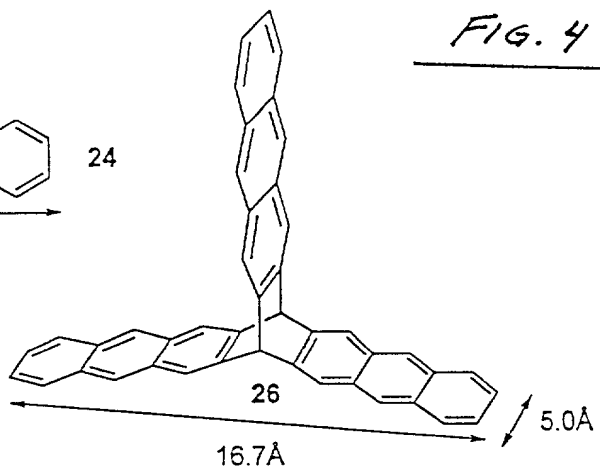
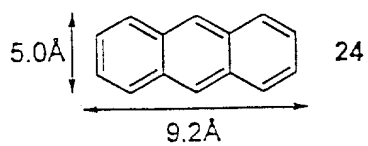




FIG. 4



039500-089101  
F01660-0605660

FIG. 5

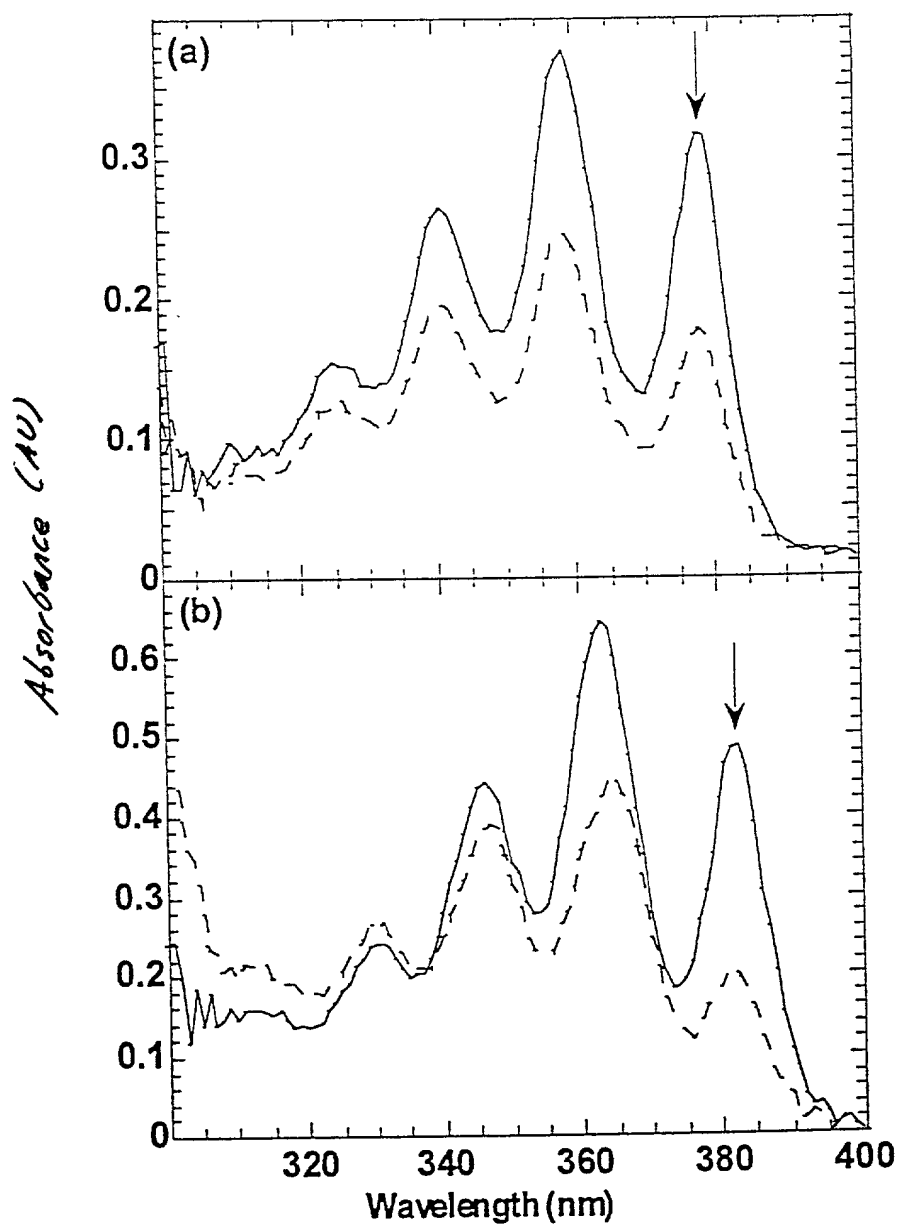


Fig. 6

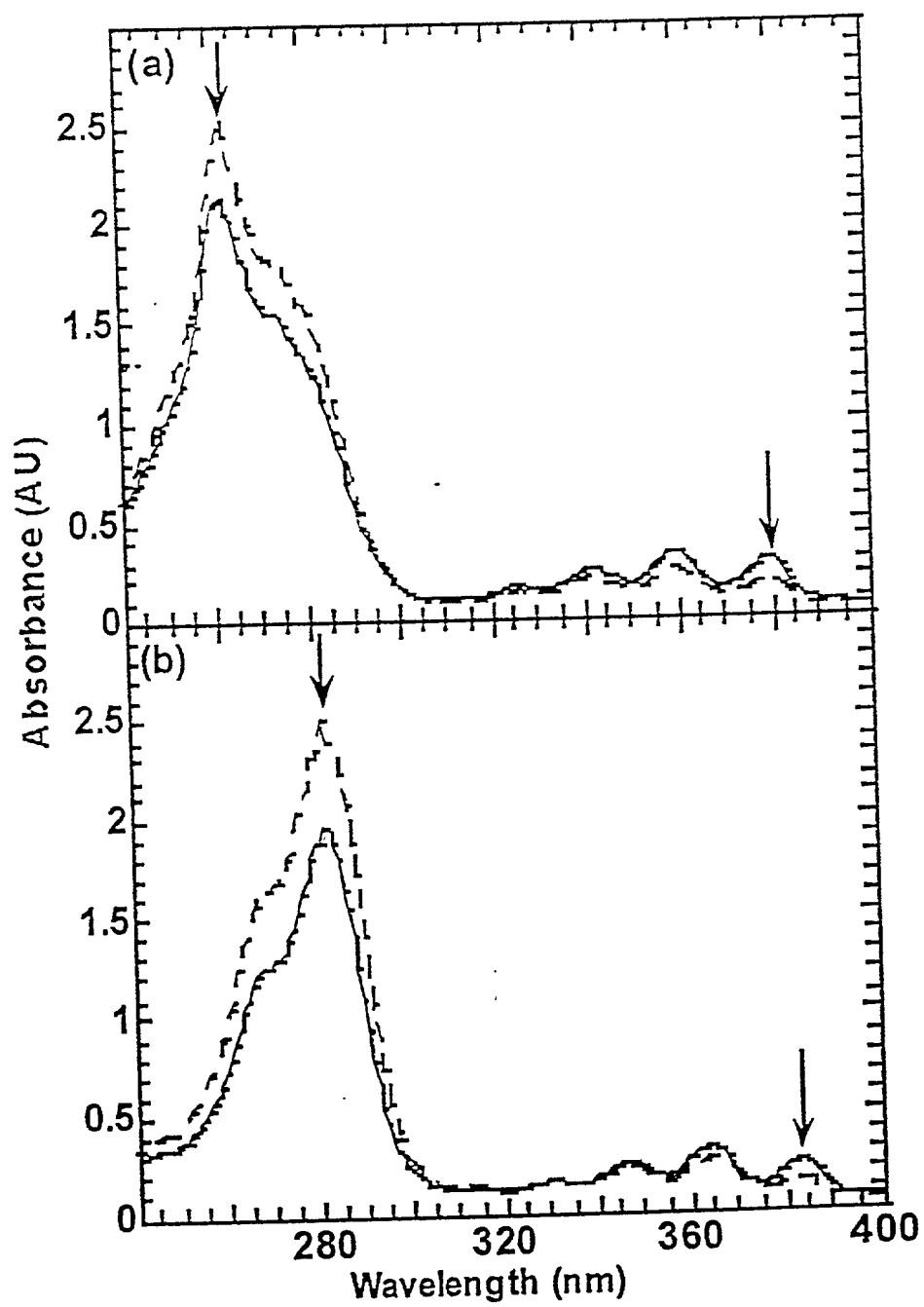
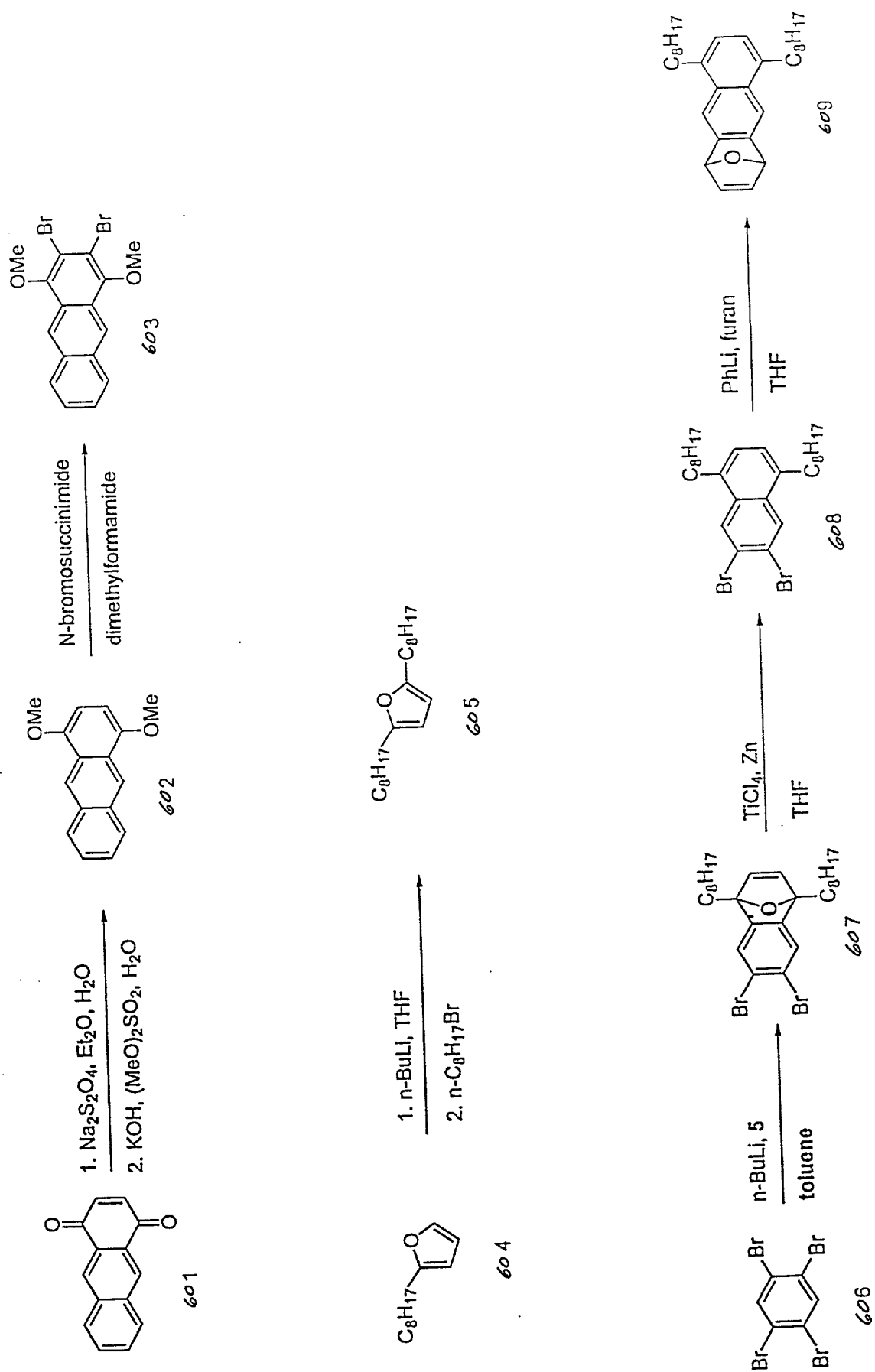
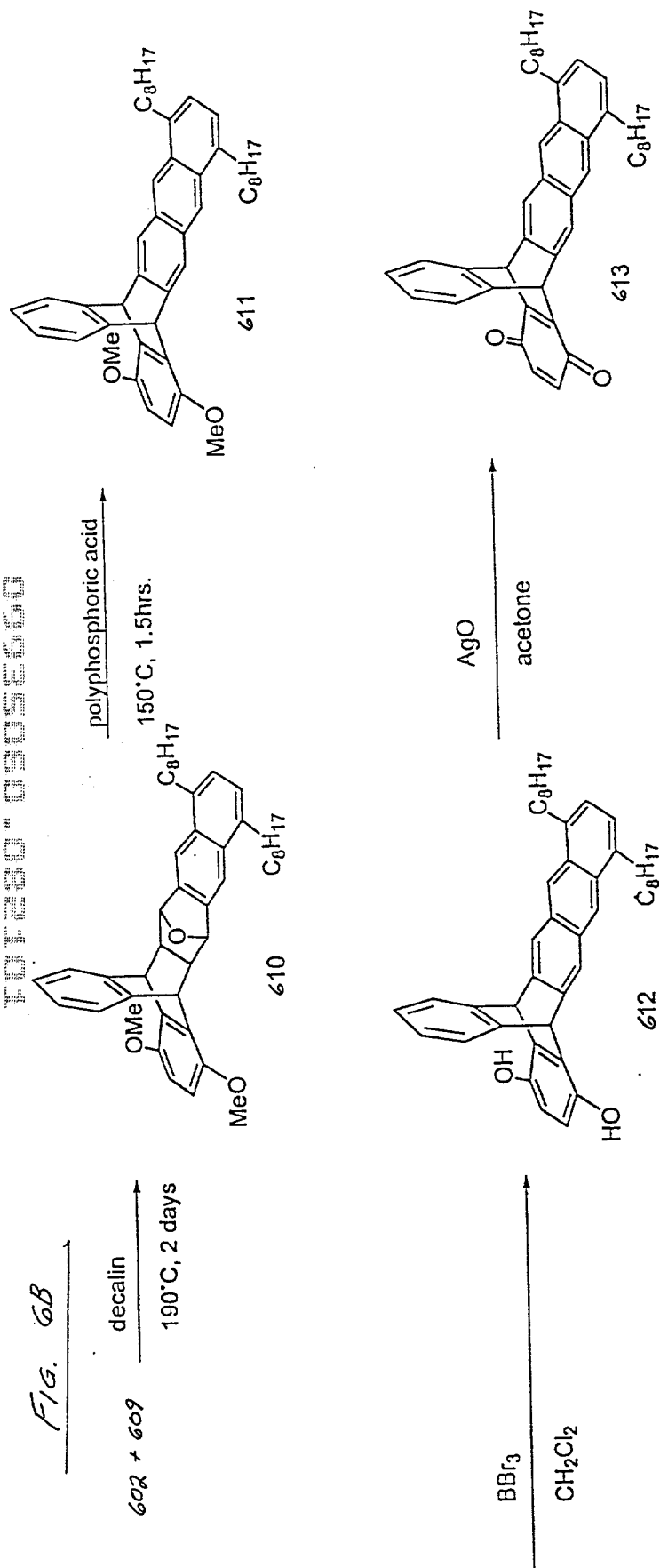
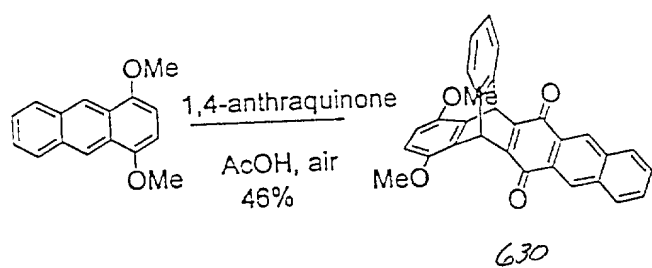


Fig. 6A

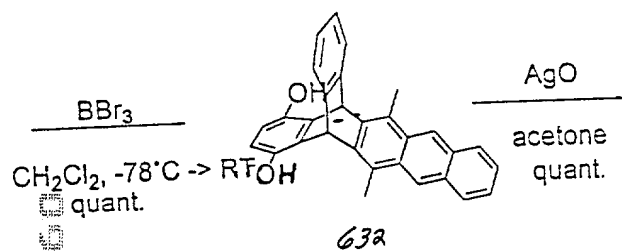
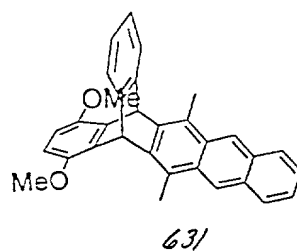
101280"05092660



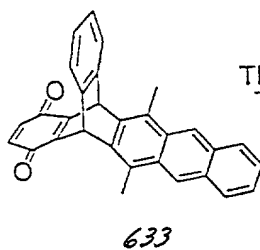




1. MeLi, Et<sub>2</sub>O  
 2. TiCl<sub>3</sub>, LAH  
 58%



AgO  
 acetone  
 quant.

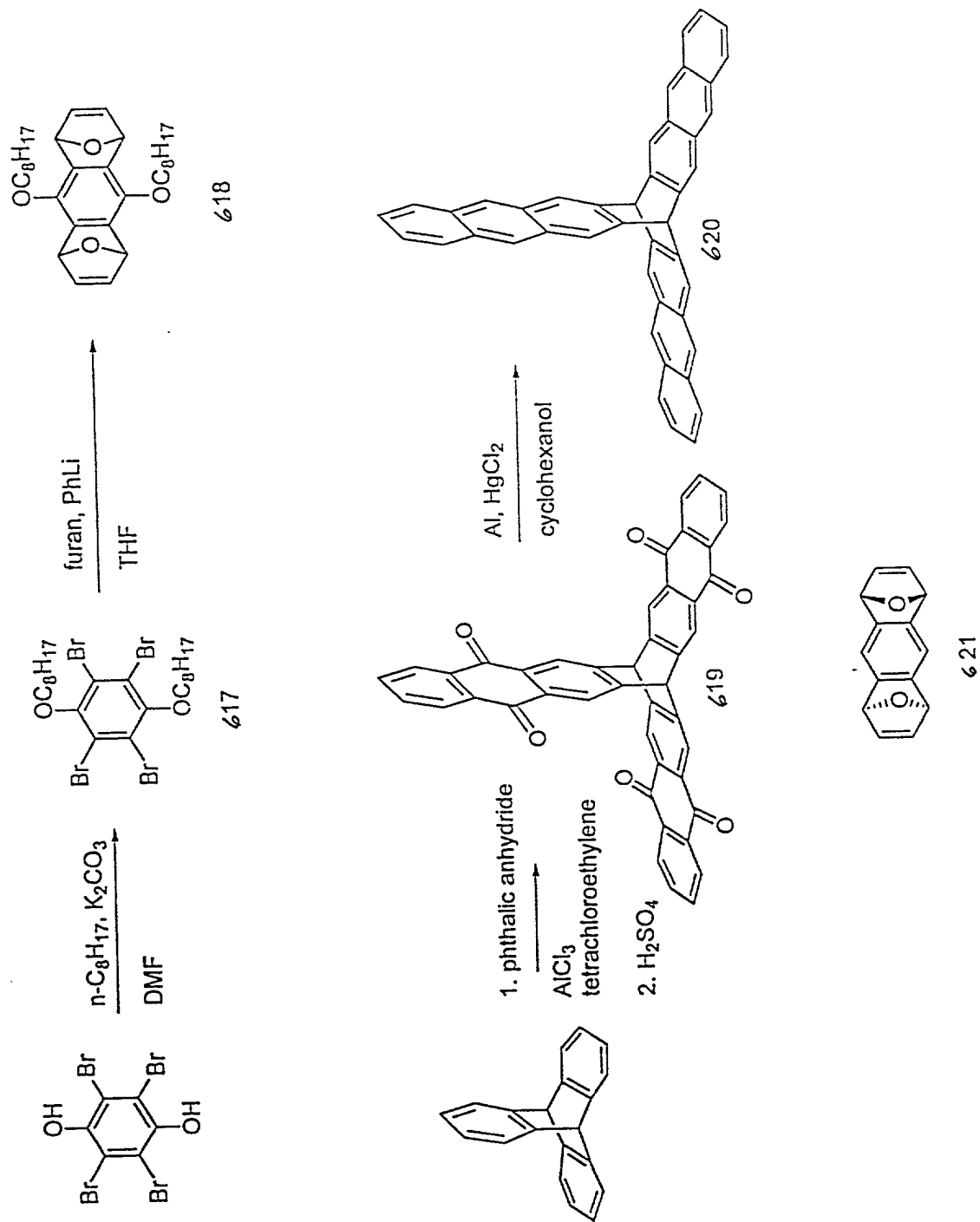


THF, sealed tube

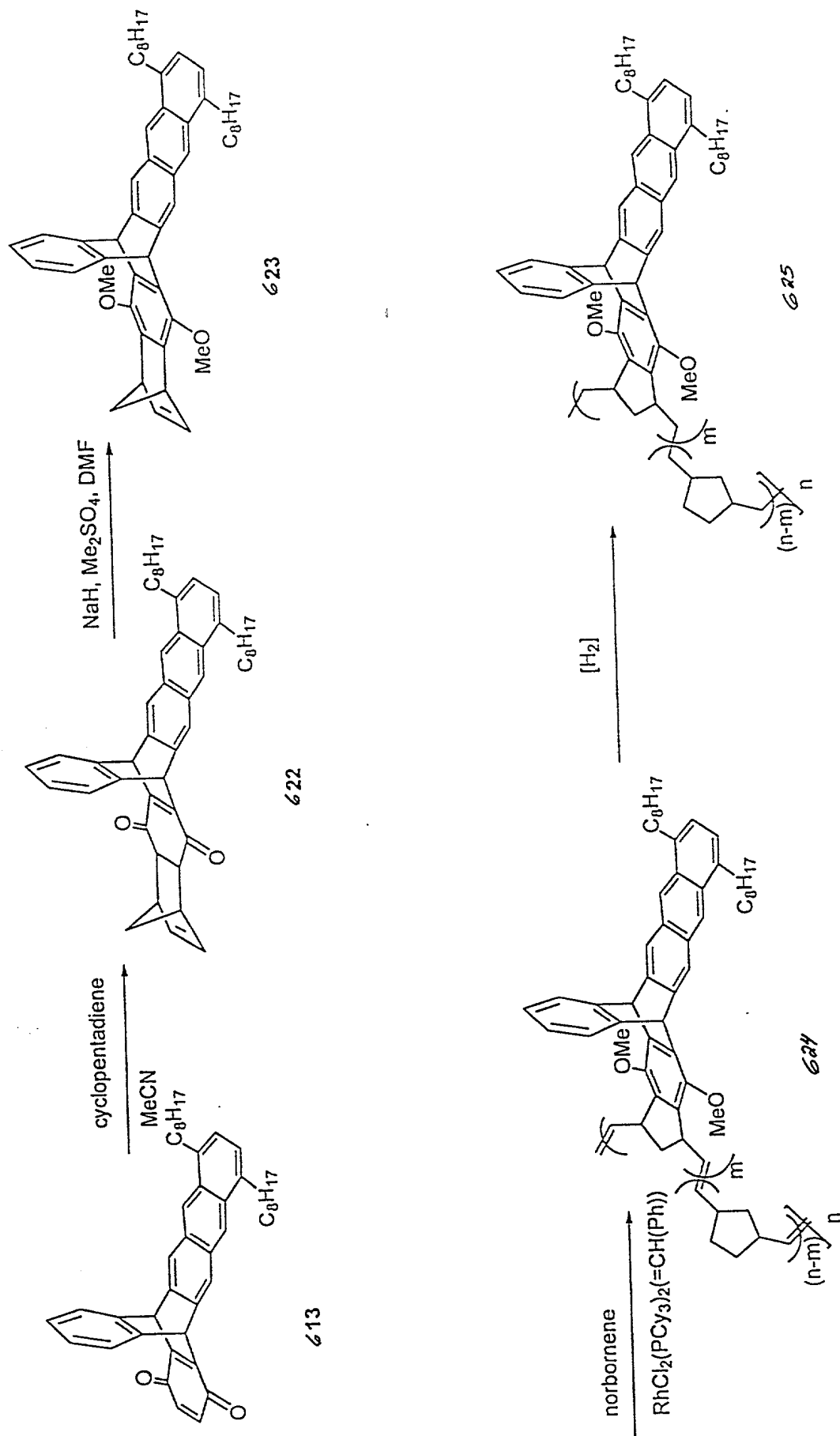
polymer

FIG. 6C









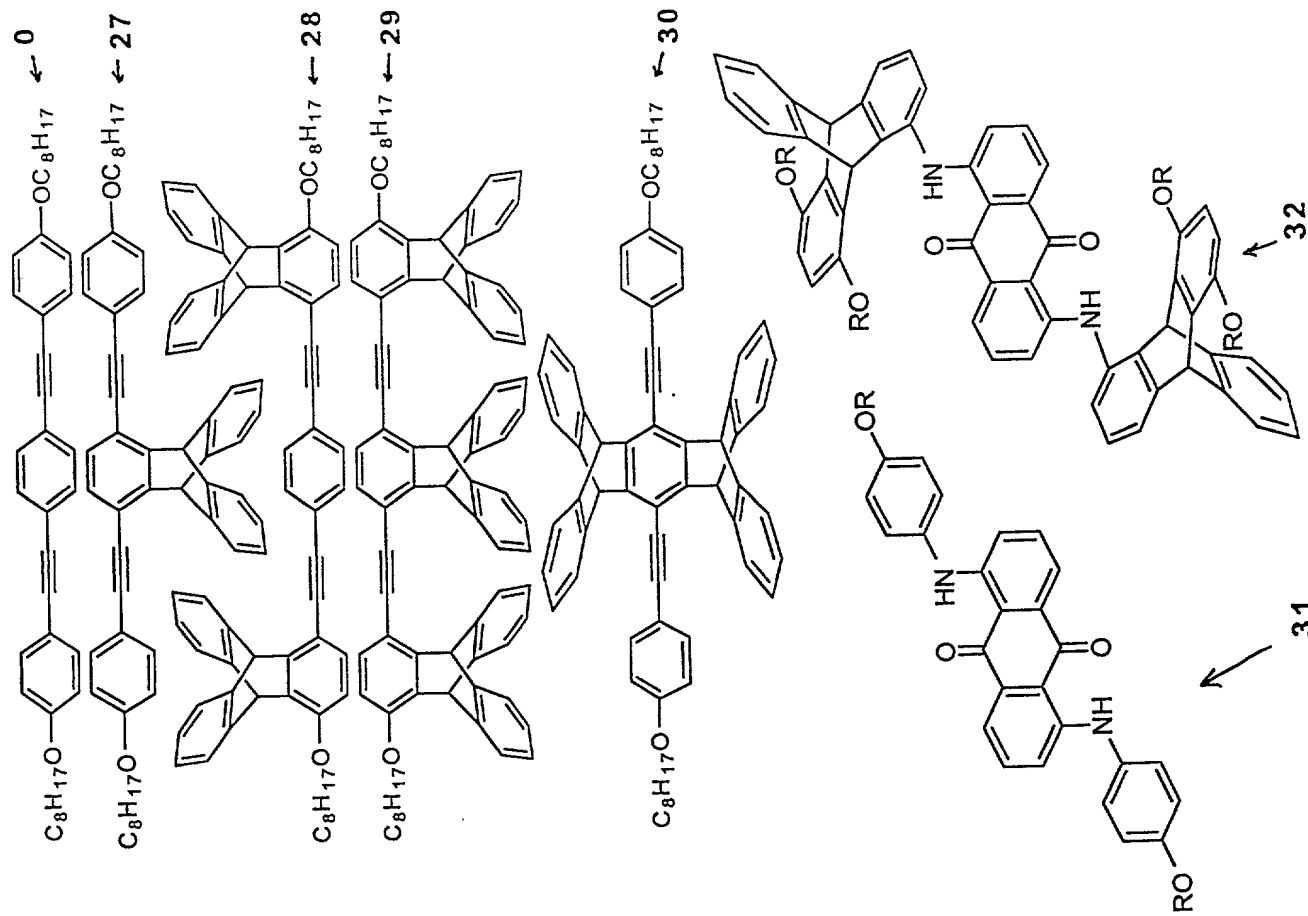


Figure 7. ( $\text{R} = \text{nC}_8\text{H}_{17}$ )

Figure 8.

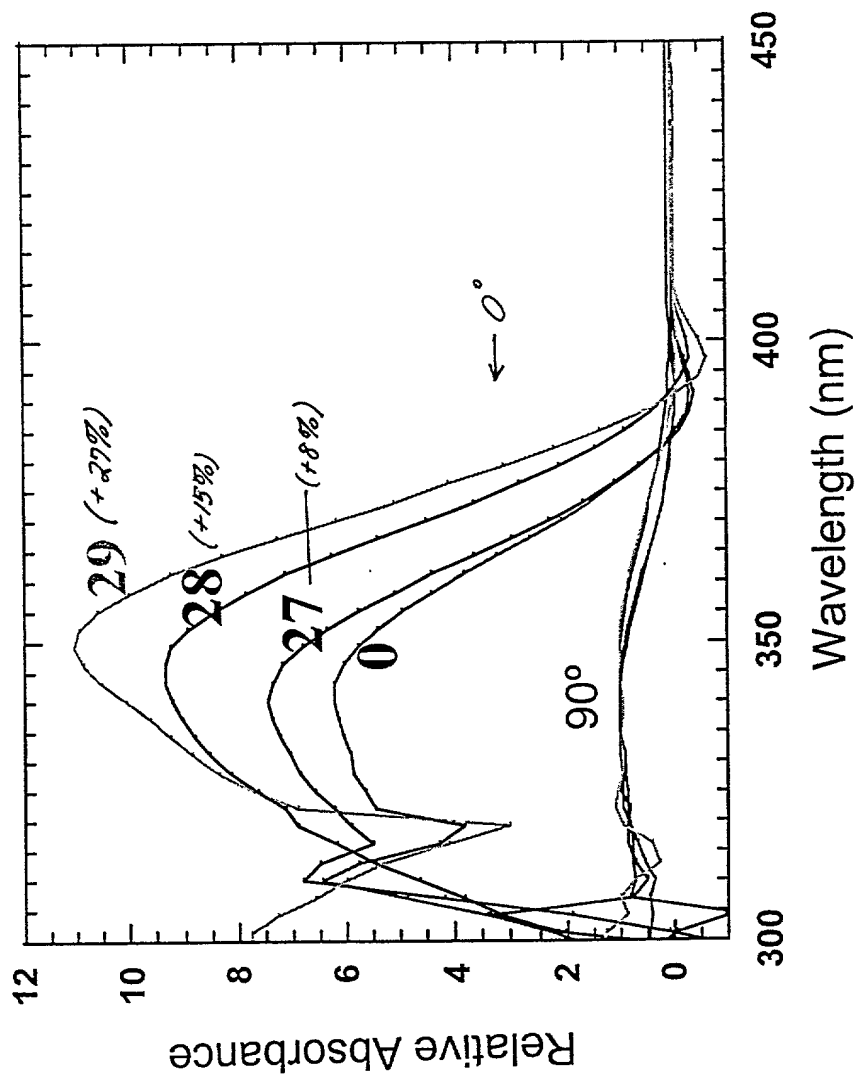


Figure 9

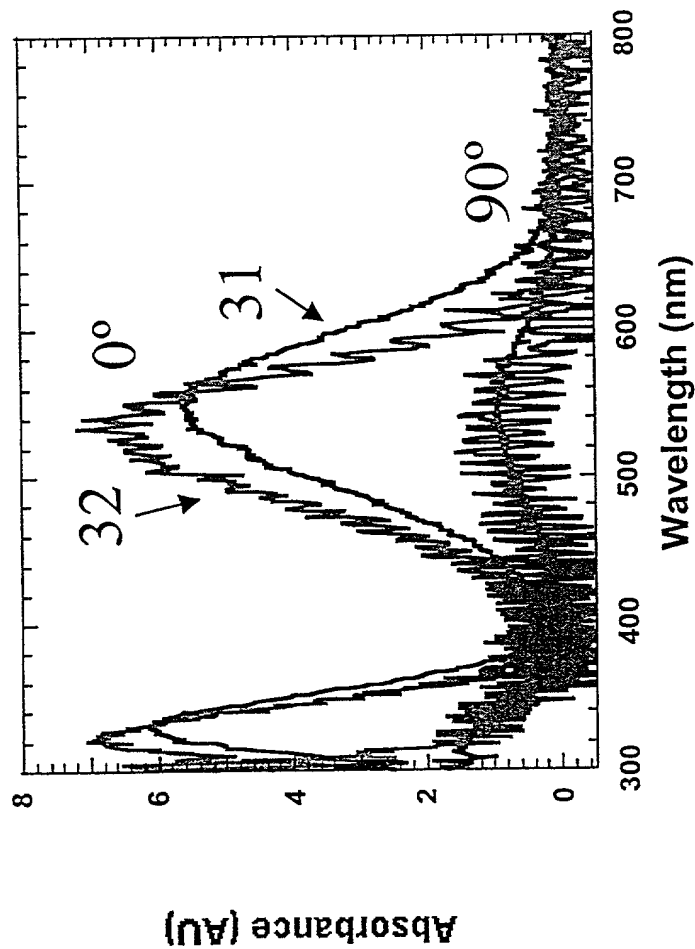




Fig. 9B

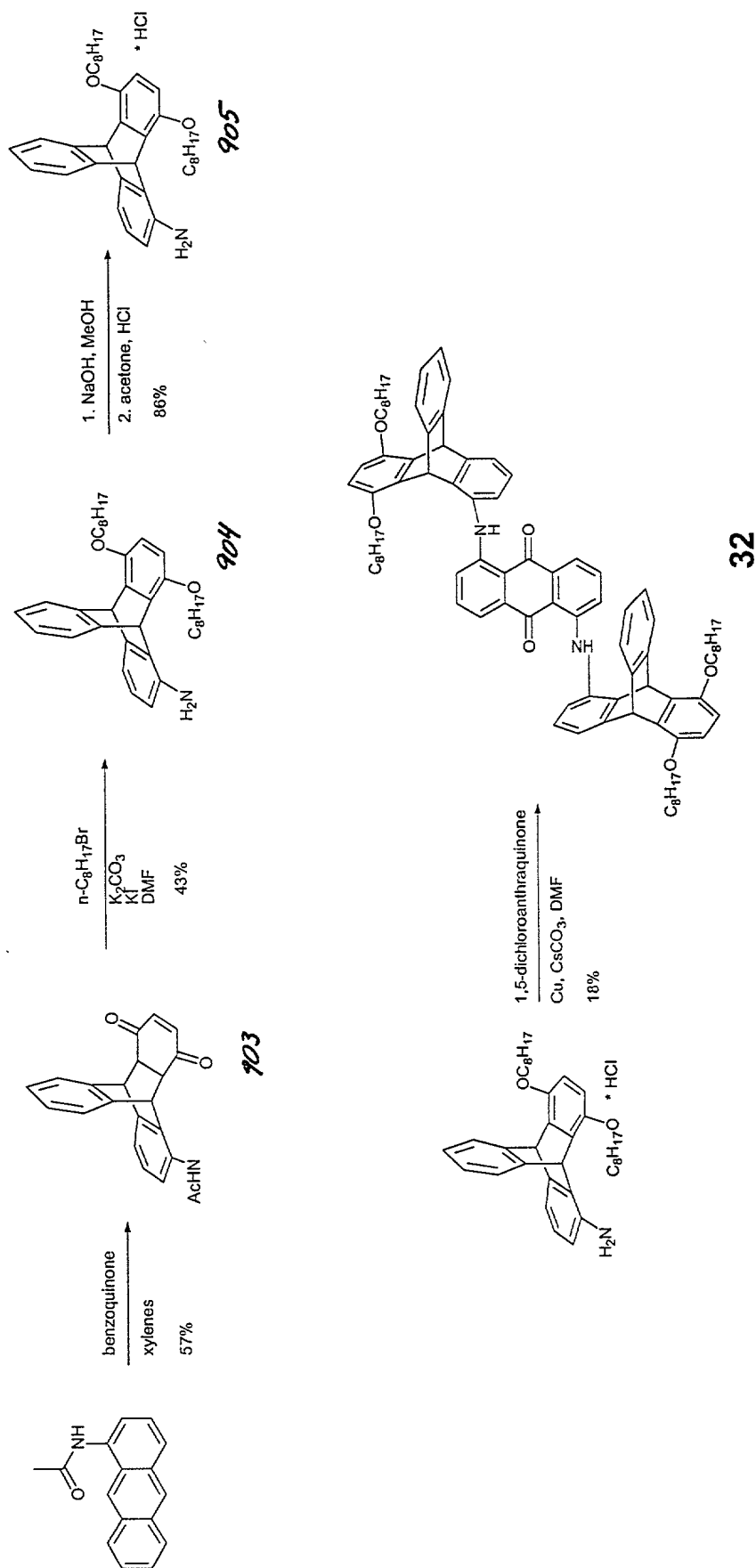
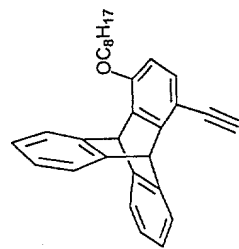
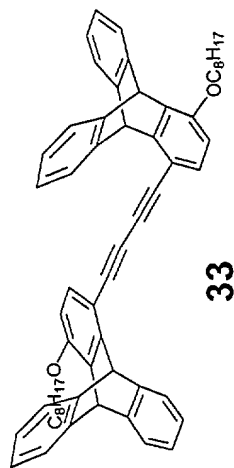


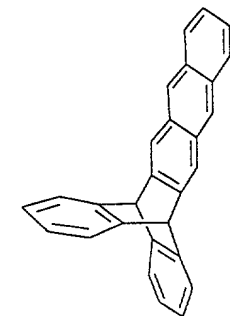
Fig. 9c



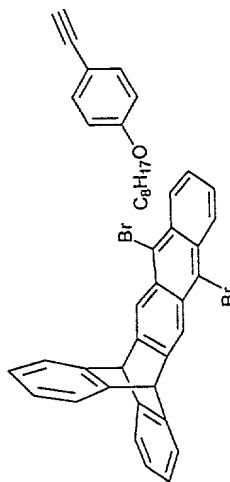
PdCl<sub>2</sub>(PPh<sub>3</sub>)<sub>2</sub>, CuI, benzoquinone  
DIPA, toluene  
63%



33

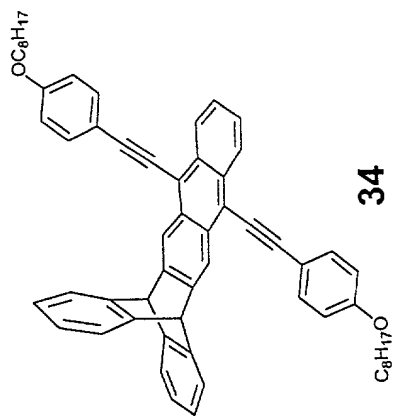


NBS  
DMF  
96%

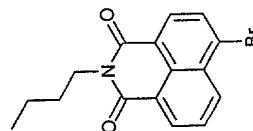


906

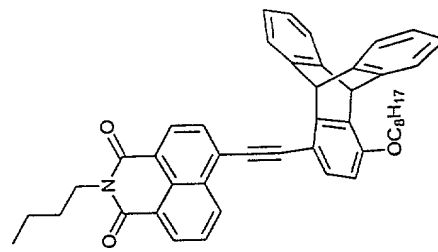
PdCl<sub>2</sub>(PPh<sub>3</sub>)<sub>2</sub>  
CuI  
toluene  
DIPA  
43%



34



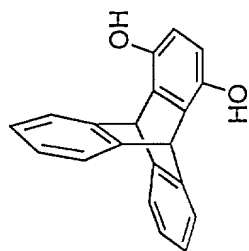
PdCl<sub>2</sub>(PPh<sub>3</sub>)<sub>2</sub>  
CuI  
toluene  
DIPA  
71%



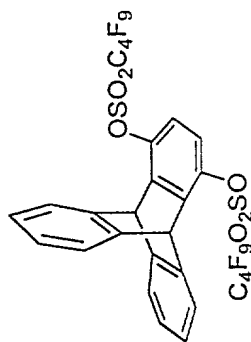
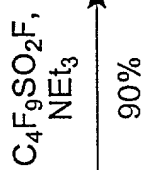
35



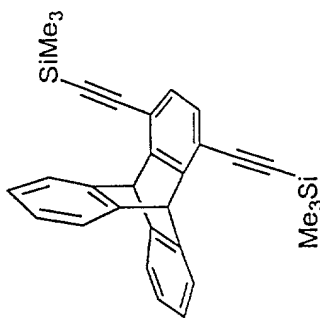
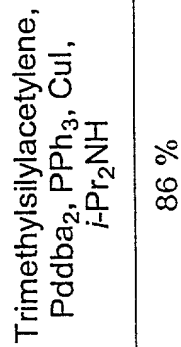




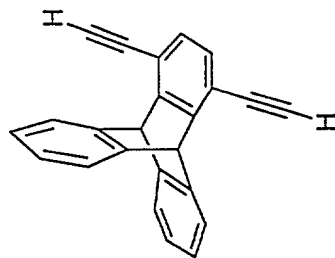
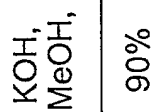
39



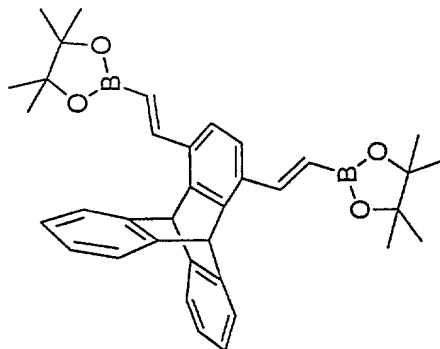
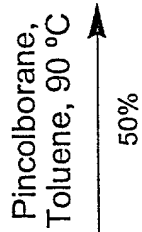
40



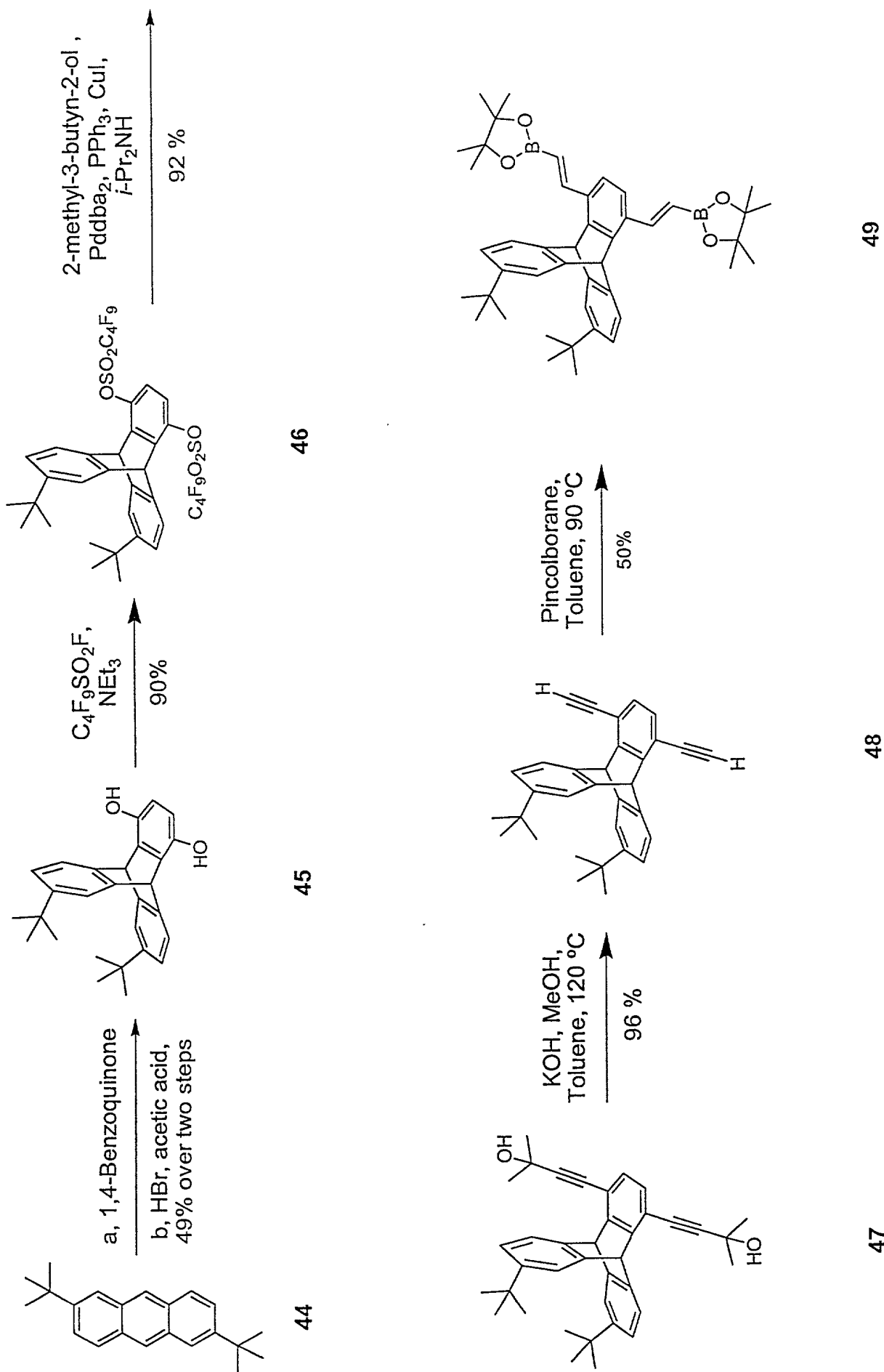
41

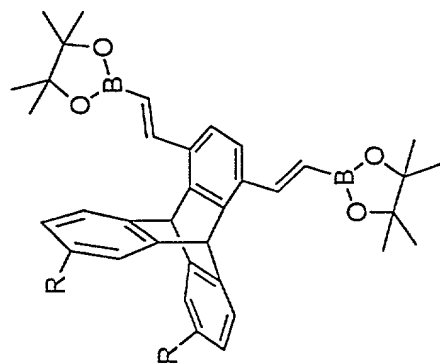


42



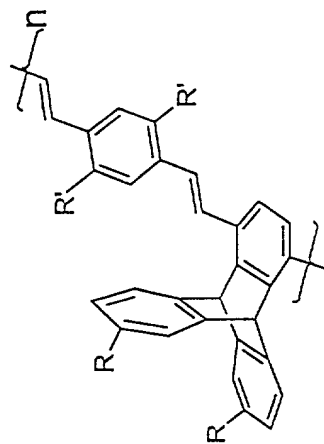
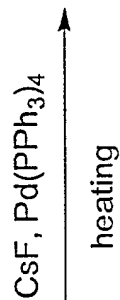
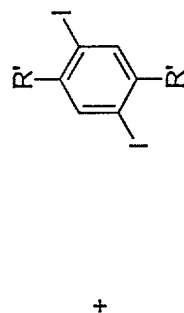
43





43, R = H

49, R = *tert*-butyl

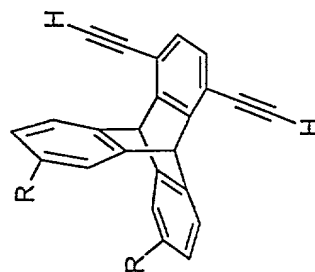


52, R = H, R' = -O-*n*-C<sub>12</sub>H<sub>25</sub>

53, R = *tert*-butyl, R' = -O-*n*-C<sub>12</sub>H<sub>25</sub>

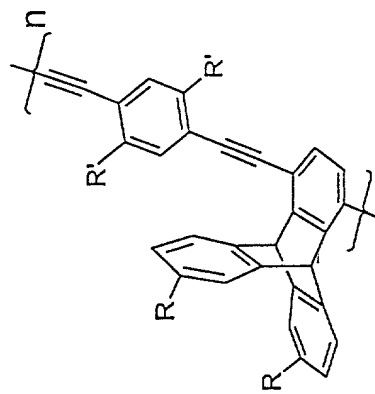
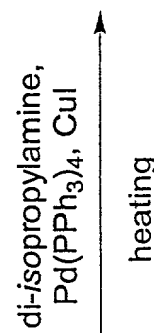
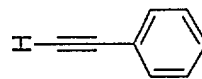
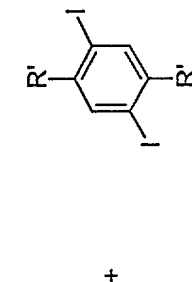
54, R = H, R' = 2-ethyl-hexyl

55, R = *tert*-butyl, R' = 2-ethyl-hexyl



42, R = H

48, R = *tert*-butyl



51, R' = 2-ethylhexyl

58

56, R = H, R' = 2-ethyl-hexyl

57, R = *tert*-butyl, R' = 2-ethyl-hexyl

Fig. 9H

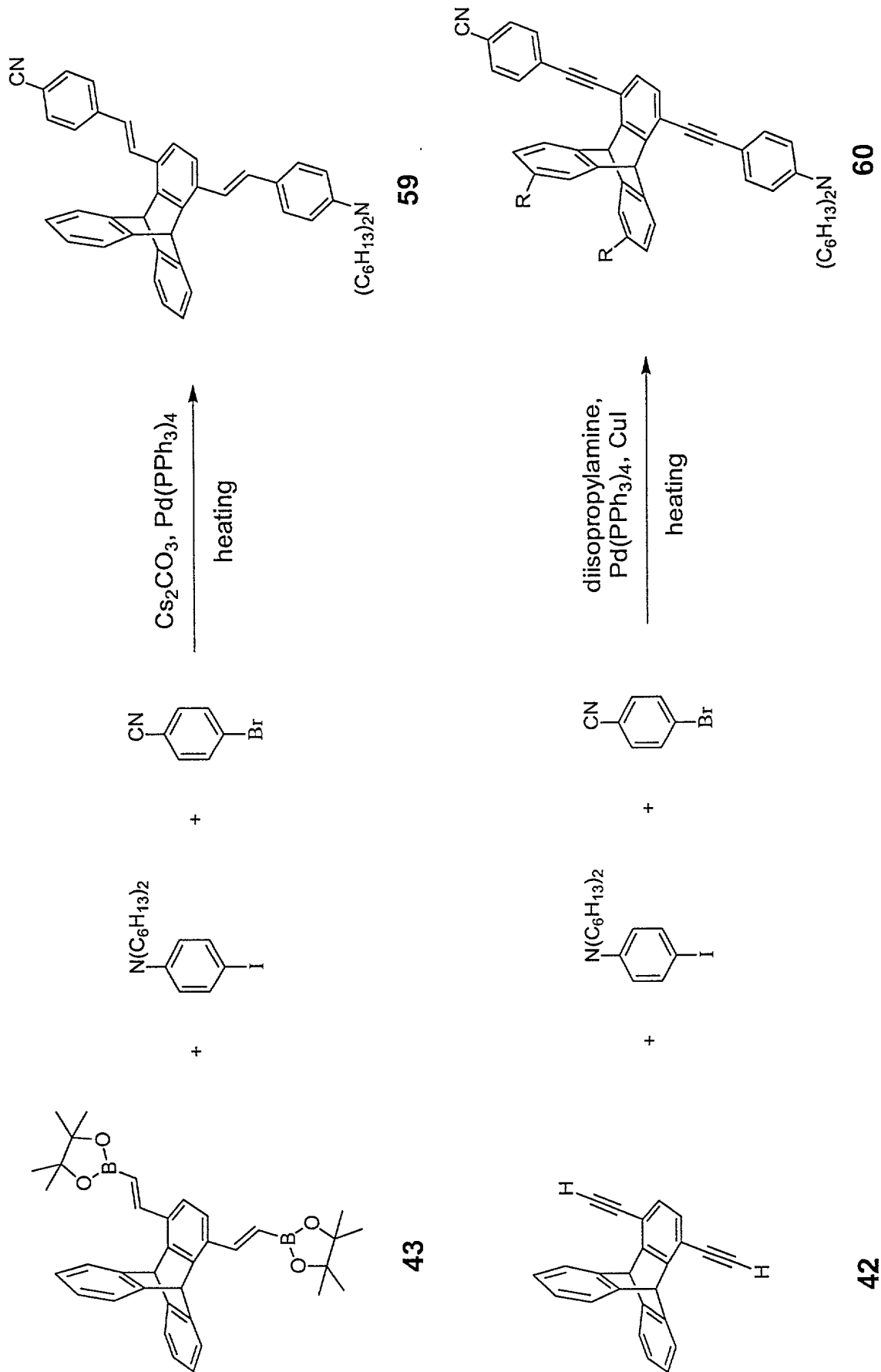


Figure 10

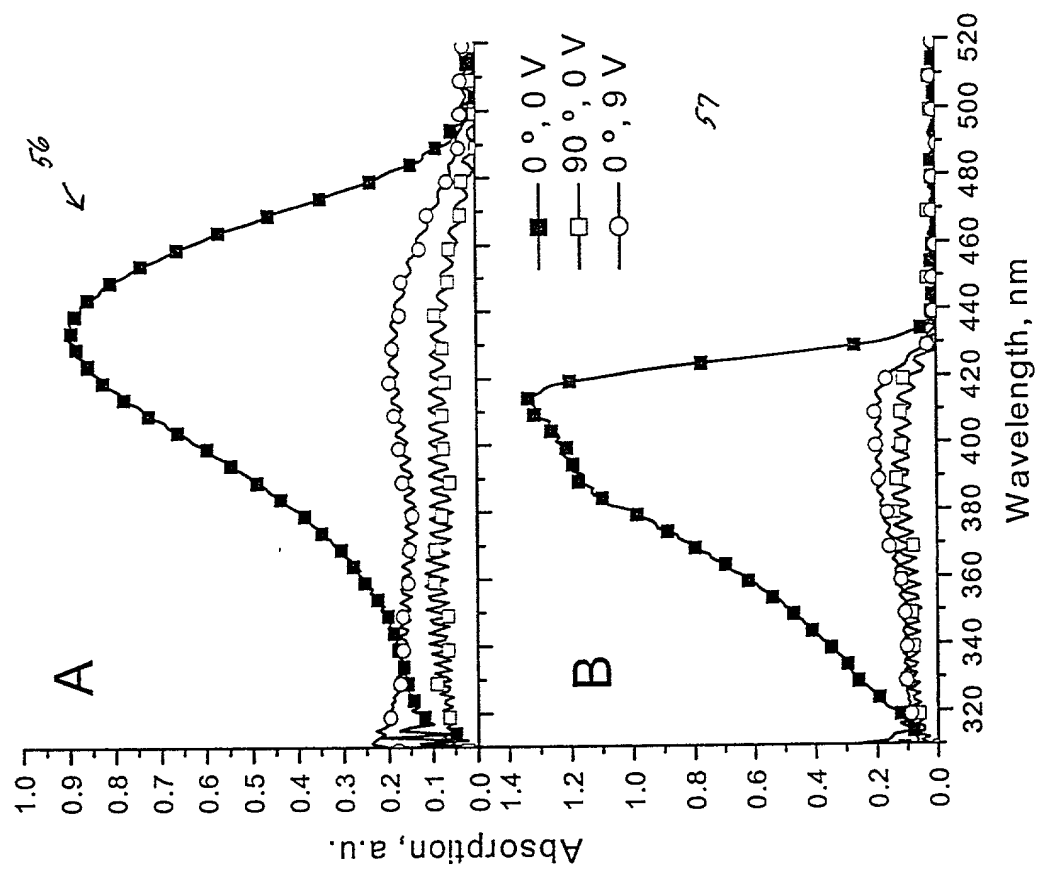


Figure 11

